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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,097	04/06/2001	Nobuaki Ono	205447US2	5017

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

ALLEN, DENISE S

ART UNIT PAPER NUMBER

2872

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/827,097	Applicant(s) ONO ET AL.	
	Examiner Denise S Allen	Art Unit 2872	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2001 and 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 30, 2004 has been entered.

***Response to Arguments***

Applicant's arguments with respect to claims 1 – 15 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Objections***

Claims 8 – 11, 13, and 15 are objected to because of the following informalities: the limitation “the mounting portion” (claim 8 lines 23 – 24, claim 13 lines 23 – 24, and claim 15 lines 30 – 31) lacks antecedent basis because it is not previously recited in claim 8 or 13.

Suggested correction: replace the limitation with “the mounting position”. For the purpose of examination the mounting portion is interpreted by the Examiner to mean the mounting position recited in claims 8 (line 15), 13 (line 15), and 15 (line 22). Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naiki et al in view of Kane et al (US 6,061,190).

Regarding claims 1 and 12, Naiki et al teaches an optical scanning device (Figure 7) comprising: a light source (Figure 8 reference 1); a coupling lens (reference 3) coupling a beam emitted from said light source (Figure 13A); a light deflector (Figure 7 reference 31) deflecting the beam from said coupling lens (Figure 7) at a uniform angular velocity (column 7 lines 23 – 25); a line-image imaging optical system (reference 30) disposed between said coupling lens and light deflector, and causing the beam to image a line image long along main scanning directions on or in the vicinity of a deflection reflective surface of said light deflector (Figures 13A and 13B); a scanning and imaging optical system (Figure 7 reference 34) causing the beam deflected by said light deflector to image a beam spot (Figures 13A and 13B) on a medium (reference 37) to be scanned; and an optical housing (Figure 7 reference 25) in which said light source, coupling lens, light deflector, line-image imaging optical system and scanning and imaging optical system are disposed, and contained, and wherein a plurality of holding and fixing locations (Figures 8 – 11 references 7a and 10a) for holding and fixing a light-source part (references 5 and 20) comprising said light source and coupling lens are provided in at least one of said light-source part and optical housing. Naiki et al does not teach the plurality of holding and fixing locations comprise pins and holes provided to the light source part and the optical housing, which pins and holes are combined with insertion of the pins to the holes to determine a relative spatial relationship between the light source part and the optical housing.

Kane et al teaches the use of pins (references 30a and 30b) and holes (column 3 line 61) to hold and fix an optical element in a holding and fixing location by inserting the pins in the

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holes (column 3 lines 59 – 62). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the pins and holes of Kane et al for the plurality of holding and fixing locations in the optical scanning device of Naiki et al in order to make the locating of the light source part relative to the optical housing faster and easier.

Regarding claims 1, 2, and 12, Naiki et al teaches an image forming apparatus as described above. Naiki et al further teaches said light deflector is covered by a cover (column 7 lines 57 – 58); said cover has a window for the beam to be incident on and exit from said light deflector (Figure 7 reference 35); and a transparent cover member is mounted on said window (column 7 lines 58 – 61). Naiki et al does not teach said holding and fixing locations are determined so that, by selectably using said holding and fixing locations, the beam deflected by said light deflector passes through said scanning and imaging optical system approximately at the same position whether or not said transparent cover member is mounted.

Based on Snell's Law, it is inherent that the transparent cover member, when it is mounted in the window of the cover, shifts the position of the beam relative to the beam's position when the transparent cover member is not mounted in the window of the cover. It would have been obvious to one of ordinary skill in the art at the time of the invention to selectably use the holding and fixing locations to adjust the position of the beam of Naiki et al for when the transparent cover member is mounted and for when it is not mounted in order to maintain the beam position on the medium to be scanned.

Regarding claim 3, Naiki et al teaches the light-source part and the line-image optical system are disposed on a common member (Figure 7 reference 25).

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Regarding claim 4, Naiki et al teaches the coupling lens and line-image imaging optical system are formed integrally (Figure 7).

Regarding claim 5, Naiki et al teaches the light-source part comprises a plurality of light-emitting sources (Figure 9 references 1 and 1').

Regarding claims 6 and 7, Naiki et al teaches the beam emitted from the light-source part comprises an approximately parallel beam (Figure 9 the beam exiting reference 3 is approximately parallel).

Regarding claims 8 – 11 and 13, Naiki et al teaches an optical scanning device (Figure 7) comprising a light source unit (reference 4) emitting a beam; a first imaging optical system (reference 30) causing the beam emitted by said light-source unit to image at a predetermined position (Figures 13A and 13B); a deflector (Figure 7 reference 31) receiving the beam from said first imaging optical system and performing scanning with the beam (column 7 lines 44 – 48); and a second imaging optical system (Figure 7 reference 34) causing the beam from said deflector to image a beam spot (Figures 13A and 13B) on a surface to be scanned (reference 37), and wherein: said light-source unit, first imaging optical system, deflector, and second imaging optical system are mounted in a box housing (Figure 7 reference 25); a transparent member (reference 35) of an approximately parallel plate is disposed detachably so as to be located between said first imaging optical system and deflector and between said deflector and second imaging optical system. Naiki et al does not teach the mounting position of said second imaging optical system is changeable according to whether or not said transparent member is provided.

Based on Snell's Law, it is inherent that the transparent cover member, when it is mounted in the window of the cover, shifts the position of the beam relative to the beam's

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position when the transparent cover member is not mounted in the window of the cover. It would have been obvious to one of ordinary skill in the art at the time of the invention to change the mounting position of the second imaging optical system along the main scanning direction and along the optical axis direction to adjust the position of the beam of Naiki et al for when the transparent cover member is mounted and for when it is not mounted in order to maintain the beam position on the medium to be scanned.

Naiki et al further does not teach the plurality of predetermined locations comprise projections and receiving members provided to the second imaging optical system and the box housing, which projections and receiving members are combined with contact there between to determine the mounting position of said second imaging optical system in the box housing.

Kane et al teaches the use of projections (references 30a and 30b) and receiving members (column 3 line 61) to determine the mounting position of an optical element by contact between the projections and the receiving members (column 3 lines 59 – 62). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the projections and receiving members of Kane et al for the plurality of predetermined locations in the optical scanning device of Naiki et al in order to make determining the mounting position of the second imaging optical system relative to the box housing faster and easier.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Naiki et al in view of Kane et al and further in view Kuroda.

Naiki et al in view of Kane et al teaches the optical scanning device as described above. Naiki et al and Kane et al do not teach an image forming apparatus comprising: an optical scanning device scanning a surface of a photosensitive body with a beam so as to form a latent

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image on said photosensitive body; said photosensitive body; a developing device developing the latent image so as to form a visible image; a transferring device transferring the visible image to a sheet recording medium; and a fixing device fixing the visible image onto the sheet recording medium. Kuroda does not teach the optical scanning device as claimed.

Kuroda teaches an image forming apparatus (Figure 9) comprising: an optical scanning device (references 10, 15, 20, and 25) scanning a surface of a photosensitive body (reference 30) with a beam (line with arrowhead) so as to form a latent image on said photosensitive body; said photosensitive body; a developing device (reference 32) developing the latent image so as to form a visible image; a transferring device (reference 33) transferring the visible image to a sheet recording medium (reference P); and a fixing device (reference 44) fixing the visible image onto the sheet recording medium. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the optical scanning device of Naiki et al in view of Kane et al in place of the optical scanning device in the image forming apparatus of Kuroda in order to speed up the image forming process by using multibeam scanning.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise S Allen whose telephone number is (571) 272-2305. The examiner can normally be reached on Monday - Friday, 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



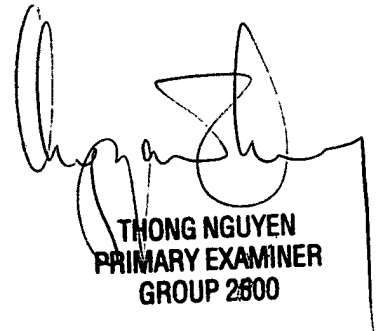
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Denise S Allen  
Examiner  
Art Unit 2872



dsa



THONG NGUYEN  
PRIMARY EXAMINER  
GROUP 2800